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EXAMINER

SAIDHA, TEKCHAND

ART UNIT

PAPER NUMBER

1652

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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PAPER

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**MAILED**

**MAR 29 2007**

**GROUP 1600**

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/734,510  
Filing Date: December 12, 2003  
Appellant(s): SVENDSEN ET AL.

Elias J. Lambiris  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 1/17/07 appealing from the Office action mailed (hereinafter, the Brief).

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**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

It is noted on page 3 of the Brief, Appellants state that there are no appeals or interferences relating to the instant application.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct and is as follows:

Allowed claims: 105-120 and 122-135.

Claims rejected: 121.

Claims cancelled: 1-104.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: the rejection of claim 121 under the judicially created

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doctrine of obviousness-type double patenting over 1-3 of Lassen et al. (U.S. Patent 6,060,298) is withdrawn because the cited patent teaches *Peniophora* phytase sequence of SEQ ID NO: 2 which is 100% to Appellants' SEQ ID NO: 7, but does not claim a method for making the wild-type *Peniophora* phytase sequence of SEQ ID NO: 2.

#### NEW GROUND(S) OF REJECTION

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the Appellant regards as his invention.

Claim 121 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Appellant regards as the invention. The rejection is explained in paragraph 9 - 'Grounds of Rejection'.

Therefore, the rejections to be reviewed are:

1. Rejection of claim 121 as being anticipated under 35 U.S.C. 102(e) by Lassen et al. (U.S. Patent 6,060,298) and
2. Rejection of claim 121 under 35 U.S.C. 112, second paragraph, as being indefinite.

#### (7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

Lassen et al. [U.S.P. 6,060,298].

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

(a) Claim 121 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Appellant regards as the invention.

claim 121 depends on claim 105. Claim 105 is drawn to 'a method of producing a modified phytase, comprising introducing a mutation in an amino acid sequence of a phytase, wherein the modified phytase has phytase activity and the mutation is at one or more positions selected from the group consisting of 71, 72, 73, 74, 75, 76, 77, 78, 81, 82, 84, 116, 117, 119, and 120, wherein each position corresponds to the amino acid sequence of mature *P. lycii* phytase (SEQ ID NO: 7).'

Claim 121 (depends on claim 105), is drawn to 'a method of producing a modified phytase and recites the following specific substitutions 75W (Trp), 78S (Ser) and 84Q (Gln) corresponding to SEQ ID NO: 7. Wild-type phytase sequence of SEQ ID NO: 7

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already has a tryptophan (or Trp or 'W') at position 75, a serine (or Ser or 'S') at position 78, and Glutamine (or Gln or 'Q') at position 84.

Therefore substitution of a tryptophan for another tryptophan (W75W); or substitution of a serine for another serine (S78S); or substitution of a Glutamine for another Glutamine Q84Q (Gln), in claim 121, is equal to no substitution. Hence these substitutions in claim 121 therefore result in "a method of making the unmodified phytase or wild-type phytase (at least of SEQ ID NO: 7)," and is therefore not a method of making 'a modified phytase'. The claim is therefore confusing and indefinite, as the claim is no longer 'a method of producing a modified phytase.'

(b) Claim 121 is rejected under 35 U.S.C. 102(e) as being anticipated by Lassen et al. [U.S.P. 6,060,298]. Lassen et al. teach a recombinant method of making (by cloning and expression) *Peniophora* phytase, i.e., the sequence of SEQ ID NO: 2. See example 1, columns 17-24 & 31. Appellants' SEQ ID NO: 7 is a well known prior art sequence and is 100% identical to the sequence of SEQ ID NO: 2 taught by Lassen et al.

As explained above and repeated here Claim 121 (depends on claim 105), is drawn to 'a method of producing a modified phytase and recites the following specific substitutions 75W

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(Trp), 78S (Ser) and 84Q (Gln) corresponding to SEQ ID NO: 7. Wild-type phytase sequence of SEQ ID NO: 7 already has a tryptophan (or Trp or 'W') at position 75, a serine (or Ser or 'S') at position 78, and Glutamine (or Gln or 'Q') at position 84.

Therefore substitution of a tryptophan for another tryptophan (W75W); or substitution of a serine for another serine (S78S); or substitution of a Glutamine for another Glutamine Q84Q (Gln), in claim 121, is equal to no substitution. Hence these substitutions in claim 121 result in "a method of making the unmodified phytase or wild-type phytase (at least with respect to the sequence of SEQ ID NO: 7)," and is therefore not a method of making a modified phytase.

No difference is seen between the claimed method of modified phytase and that of a method of making the wild-type phytase, as shown in the prior art of Lassen et al. The reference anticipates the claim.

#### **(10) Response to Argument**

Appellants respectfully submit that the Office's novelty rejection ignores limitations recited in claim 121, which are not described in Lassen et al. and therefore the 102 rejection is improper.

Lassen et al. disclose polypeptides exhibiting phytase activity, DNA sequences encoding the polypeptides, methods for producing the polypeptides, and processes of using the polypeptides. The Office is correct that a preferred embodiment of Lassen et al. is the *Peniophora lycii* phytase: which is the polypeptide of SEQ ID NO: 7 of the present application. The Office is also correct that the amino acid sequence of the wild-type *Peniophora lycii* phytase contains tryptophan at position 75, serine at position 78 and Glutamine at position 84.

However, Lassen et al. do not disclose methods of producing a modified phytase by introducing a substitution selected from the group consisting of 75W,F; 78D,S; 81A,G, Q, E; 82T, as set forth in claim 121 of the present application.

As discussed above, a modified phytase is a phytase which has an altered amino acid sequence relative to a parent phytase by the introduction of an insertion, deletion or substitution. A substitution is a change of an amino acid with a different amino acid. Thus, the invention claimed in claim 121 does not read on a method of producing a wild-type polypeptide.

For the foregoing reasons, Appellants submit that claim 121 is novel over Lassen et al. and respectfully request reversal of this rejection.



Response:

Appellants' argument that the Office's novelty rejection ignores limitations recited in claim 121, which are not described in Lassen et al. and therefore the 102 rejection is improper.

Perhaps Appellants meant the 'limitation recited in independent claim 105 upon which claim 121 depends'. In either case the response here addresses both the independent claim 105 and the dependent claim 121.

As discussed above independent claim 105 is drawn to 'a method of producing a modified phytase, comprising introducing a mutation in an amino acid sequence of a phytase, wherein the modified phytase has phytase activity and the mutation is at one or more positions selected from the group consisting of 71, 72, 73, 74, 75, 76, 77, 78, 81, 82, 84, 116, 117, 119, and 120, wherein each position corresponds to the amino acid sequence of mature *P. lycii* phytase (SEQ ID NO: 7)'; and dependent claim 121 is drawn to 'a method of producing a modified phytase and recites several specific substitutions (in a Markush group), but the following specific substitutions, viz., 75W (Trp), 78S (Ser) and 84Q (Gln) corresponding to SEQ ID NO: 7 are the ones relevant to this rejection.

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As may be noted claim 105 is a broad claim drawn to 'method of making modified phytase by mutating one or more positions selected from the group consisting of 71, 72, 73, 74, 75, 76, 77, 78, 81, 82, 84, 116, 117, 119, and 120 with respect to SEQ ID NO: 7 are modified by another amino acid. Appellants also acknowledge that a substitution is a change of an amino acid with a different amino acid.

The unmodified sequence of SEQ ID NO: 7 at the specific positions are the same, viz., W75, S78 and Q84.

However, this is not the case in claim 121, wherein the claimed method depends from a broader claim 105, now substitutes a tryptophan for another tryptophan (W75W); or a serine for another serine (S78S); or a Glutamine for another Glutamine Q84Q (Gln), and such a substitution is equal to no substitution at all. The claimed method of claim 121, reverts back to "a method of making the unmodified phytase or wild-type phytase (at least with respect to the sequence of SEQ ID NO: 7)," and is therefore not a method of making a modified phytase as no amino acid is altered or substituted with a different amino acid at these positions, and therefore taught by Lassen et al. (U.S. Patent 6,060,298).

Several telephone attempts were made during the prosecution of this application, especially before the mailing of the Final

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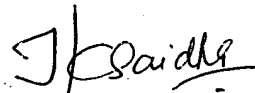
Office Action as well as before the mailing of Advisory Action and allowable subject matters were discussed and Appellants were invited to amend the claim(s) to place them in condition for allowance. However, an agreement could not be reached.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

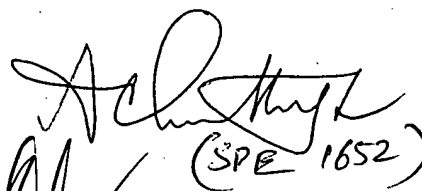


Tekchand Saidha  
Primary Examiner  
Art Unit 1652

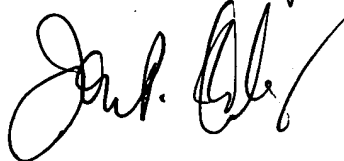
March 27, 2007

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